

- Use proper IUPAC rules for naming the following binary ionic compounds:
  - $\text{NaCl(s)}$
  - $\text{CaO(s)}$
  - $\text{CaCl}_2\text{(s)}$
  - $\text{KCl}$
  - $\text{Al}_2\text{O}_3\text{(s)}$
  - $\text{CaH(s)}$
- Write the formulas for the following binary ionic compounds.
  - Silver chloride
  - Magnesium oxide
  - Sodium fluoride
  - Strontium selenide
- Write a chemical formula for the two elements(molecules) given. IGNORE original subscripts. Only use charges to decide upon the formula.  
 Ex:  $\text{H}_2\text{(g)}$   $\text{S}_8\text{(s)}$   $\text{H}^+$   $\text{S}^{2-}$  now use criss cross  $\text{H}_2\text{S}$ 
  - $\text{Ag(s)}$   $\text{S}_8\text{(s)}$
  - $\text{Sr(s)}$   $\text{O}_2\text{(g)}$
  - $\text{Al(s)}$   $\text{Cl}_2\text{(g)}$
  - $\text{Ca(s)}$   $\text{S}_8\text{(s)}$
  - $\text{Mg(s)}$   $\text{P}_4\text{(s)}$
- Write the formula for the following compounds.
  - Mercury (II)sulfide
  - Molybdenum(IV)sulphide
  - Manganese (IV)oxide
  - Nickel(II)bromide
  - Copper(II)chloride
  - Iron(III) iodide
- Name the following compounds considering their oxidation state. Be sure to indicate this using a roman numeral on the metal ion. (Beware these are multivalent/multicharged)
  - $\text{CuS(s)}$
  - $\text{Cu}_2\text{S(s)}$
  - $\text{PbS}_2\text{(s)}$
  - $\text{Fe}_2\text{O}_3\text{(s)}$
  - $\text{NiCl}_2\text{(s)}$
  - $\text{CuBr}_2\text{(s)}$
  - $\text{Cr}_2\text{O}_3\text{(s)}$
  - $\text{V}_2\text{O}_5\text{(s)}$
- Practise with hydrates. Name the following hydrates.
  - $\text{CuSO}_4 \cdot 5\text{H}_2\text{O(s)}$
  - $\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O(s)}$
  - $\text{MgSO}_4 \cdot 7\text{H}_2\text{O(s)}$
  - $\text{CaSO}_4 \cdot 2\text{H}_2\text{O(s)}$
  - $\text{Fe}_2\text{O}_3 \cdot 3\text{H}_2\text{O(s)}$
- Write formulas for the following.
  - Aluminum chloride hexahydrate
  - Sodium sulfate decahydrate
  - Lithium chloride tetrahydrate
  - Sodium thiosulfate pentahydrate
  - Sodium sulfate heptahydrate

Do you remember these MOLECULES FROM GRADE 10 ? They exist as pairs when written by themselves  
 Lucky "7" Diatomics  $\text{N}_2\text{(g)}$   $\text{O}_2\text{(g)}$   $\text{F}_2\text{(g)}$   $\text{Cl}_2\text{(g)}$   $\text{Br}_2\text{(l)}$   $\text{I}_2\text{(s)}$   $\text{H}_2\text{(g)}$   
 Here are a few more to remember some polyatomic molecules..... $\text{P}_4\text{(s)}$   $\text{S}_8\text{(s)}$   $\text{O}_3\text{(g)}$   
 (these ones like to exist as a group when written by themselves.....

- Practise with molecular equations. Write a formula equation for the following.
  - Nitrogen + oxygen  $\rightarrow$  nitrogen dioxide
  - Solid silicon + fluorine gas  $\rightarrow$  silicon tetrafluoride solid
  - Methane gas reacts with oxygen gas to produce liquid methanol
  - Solid boron reacts with hydrogen gas to produce gaseous diboron tetrahydride
  - Octane reacts with oxygen to produce carbon dioxide gas and carbon monoxide gas and carbon and water vapor